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Insights from World Bank Research on Trade and Globalization

Successful international integration, supported by sound national policy and effective international cooperation, has underpinned most experiences of rapid growth, shared prosperity, and reduced poverty. Today, country-level trade in final goods and conventional trade policies such as tariffs are reasonably well understood, but important questions remain: How do firms and workers engage in trade, and how does trade affect productivity and poverty? How can national trade-related policies enhance growth and reduce poverty? And how can international cooperation help in achieving these objectives?

These are the questions driving the World Bank's research on trade and globalization, including the research papers summarized in this issue.

Understanding trade patterns and their impact. The focus of this research is increasingly on the microeconomic aspects of international integration as well as the implications of the fragmenting of global production. The research group's new Exporter Dynamics Database, drawing together customs transaction-level data for more than 70 countries, is helping us to understand the elements of trade success. Using these data, a recent paper finds that developing countries lack the large, dominant firms that boost the exports of richer countries—and also see more exporter churning, with higher entry and exit rates. Export success comes in an environment that encourages not just small and medium-size firms but also large ones.

The emergence of global value chains is creating new trade opportunities but also the challenge of meaningful participation. A paper using firm-level data shows the rise in domestic content of China's exports and attributes it in part to the country's investment liberalization, which led to a greater variety of domestic materials becoming available at lower prices. Another paper shows that own trade liberalization can boost export performance. It finds that exporting to richer countries led firms in Portugal to raise the average quality of the goods they produce by purchasing higher-quality inputs.

The labor market effect of trade reform depends on how easily workers can move from sectors exposed to greater competition to those with greater opportunities. A recent paper proposes a method to estimate labor mobility costs using readily obtainable data. Its estimates of labor mobility costs worldwide can be used to explore the effect of trade shocks on employment and wages.

Designing national policy reform. The focus of trade policy reform has shifted from goods tariffs to nontariff measures such as technical regulations, to services trade policies, and to the devising of cost-effective strategies for trade facilitation and export promotion.

Trade-affecting technical regulations have become visible like rocks in the ebbing tide of tariffs. A recent paper assesses their effects by combining data on all exporting firms in 42 developing countries with new data on pesticide standards for 243 agricultural

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What Drives Differences in Exporter Behavior across Countries?

Analysis using a new database finds that both a country's size and its stage of development matter for the behavior of exporters

Countries do not export; firms do. Yet while trade at the country level is well understood, knowledge of trade at the firm level has been incomplete. What determines which firms participate in exporting—and which of these survive and grow? The new Exporter Dynamics Database has helped address such questions through novel indicators on the micro structure of the export sector. Drawing on national customs data at the exporter level for more than 70 countries, the database provides the number and average size of exporters, exporter concentration, and rates of entry, exit, and entrant survival among exporters for each country at different levels of disaggregation.

The data show great variation in exporter characteristics and dynamics across countries. Chile has a third more exporters than Morocco, and its exporters are three times as large on average. Cameroon and Malawi have high entry rates into exporting, but only 25 percent of entrants survive after the first year.

In a recent analysis using the database indicators for 38 developing and 7 developed countries, Fernandes, Freund, and Pierola identify novel stylized facts on how exporter behavior varies with country size and stage of development. They then examine whether these facts are consistent with predictions from trade theory with heterogeneous firms and from models with allocative inefficiencies.

Systematic variation in export sector characteristics across countries of different sizes or income levels could result from differences in resource endowments or in the process of resource allocation. To explore how differences in resource endowments affect exporter behavior, the authors rely on a standard model of trade with heterogeneous firms that draws a direct link between firm size and productivity. A stark prediction from this model is that larger countries should export more because they have more firms rather than because they have larger firms.

To understand how variation in allocative efficiency across countries affects exporter behavior, the authors consider the literature on efficiency gains from within-sector resource reallocation across firms, which attributes variation in firm size to distortions in this resource allocation. One implication from this literature is that economies with fewer distortions (more developed economies) should have more exporters and higher survival rates of entrants because the most productive firms are able to grow and export. But implications for average exporter size and exporter concentration at the top of the size distribution depend on which firms are most constrained. If only the most productive firms are able to overcome regulatory hurdles in economies with allocative inefficiencies while mid-productivity firms are held back—so that the size distribution has a "missing middle"—exporters should be relatively larger in developing countries and very concentrated at the top of the distribution. In contrast, if high-productivity firms are the most constrained and fail to invest, exporters should be relatively small in more distorted economies and less concentrated at the top of the size distribution—so that the distribution has a "truncated top."

The findings show that export sector characteristics are systematically correlated with both country size and stage of development. Larger countries and more developed ones have more exporters, larger exporters on average, and a greater concentration of exports among the top 5 percent of exporting firms. Greater numbers of firms explain about two-thirds of the additional export value of larger countries, while larger firm size explains the remaining third. In contrast, larger firm size is relatively more important in explaining why richer countries export more. As countries develop, gross rates of entry into and exit from exporting decrease while survival rates of entrants into export markets increase. These measures of exporter dynamics are not correlated with country size.

These novel stylized facts suggest that as countries develop and exports grow, the export expansion happens through growth in both the number and size of exporting firms, and as more resources flow to the largest firms. Consistent with the standard model of trade with heterogeneous firms, the authors find that larger countries export more in large part because they have more exporters. Consistent with resource allocation improving with stage of development, they find that more developed countries have both more exporters and more resilient exporters. Overall, the findings that both the average size of exporters and the concentration of exports at the top of the firm size distribution increase with a country's stage of development are consistent with models where firm growth is constrained in developing countries, especially among high-productivity firms—the situation with a "truncated top" of the size distribution. A key policy implication is that developing countries export less because their exporters are both smaller and less dominant on average.

Ana Fernandes, Caroline Freund, and Martha Denisse Pierola. 2016. "Exporter Behavior, Country Size and Stage of Development: Evidence from the Exporter Dynamics Database." Journal of Development Economics 119: 121–37.

The Rising Domestic Content of Chinese Exports

The domestic content of exports has been falling in most countries—but rising in China. What has caused China to defy the trend?

Over the past two decades, thanks to the growing fragmentation of global production, exporting firms have come to rely less on domestic inputs for production. Indeed, the domestic content of exports has been declining in most countries. China is an exception, despite its deep engagement in global value chains. What has caused China to defy the trend?

Kee and Tang explore this question in a recent paper. Using customs transaction-level data merged with manufacturing firm survey data, the authors measure and analyze the rising domestic content of China's exports (measured as the ratio of domestic value added in exports to gross exports). Their transaction-level data cover the universe of Chinese exporters during the period 2000–07, allowing them to construct firm, industry, and aggregate measures of domestic content over time to study their evolution. They then use the merged data sets to examine whether changes in export composition, firms' production costs, or material shares are responsible for China's rising domestic content.

The burgeoning literature on measuring domestic content at the industry and aggregate levels relies on input-output tables. While this method has the advantage of capturing input-output linkages within and across countries, the presence of firm heterogeneity may result in significant aggregation biases in estimates of domestic content. The authors use a ground-up approach that embraces firm heterogeneity by measuring domestic content at the industry and aggregate levels as the weighted averages of the domestic content for the underlying firms.

Their estimates confirm existing findings that the domestic content of China's exports has been rising, showing that it increased from 65 percent in 2000 to 70 percent in 2007. China's bilateral exports to major trading partners showed increases in domestic content of a similar magnitude. These increases in domestic content are statistically significant.

The authors' results confirm the upward trend found in an earlier study using an approach based on input-output tables (Robert Koopman, Zhi Wang, and Shang-Jin Wei, "Estimating Domestic Content in Exports When Processing Trade Is Pervasive," *Journal of Development Economics* 99 [2012]: 178–89). But their estimate is significantly higher. This difference highlights how ignoring firm heterogeneity may lead to downward aggregation bias in the approach based on input-output tables.

Samples used to construct input-output tables often consist mainly of large firms. Because large firms tend to have lower domestic content as a result of their high import-to-sales ratios, oversampling large firms in the construction of input-output tables can lead to lower aggregate estimates of domestic content. To illustrate, the authors conduct a decomposition exercise. They show that they can lower their estimate of domestic content to a level that does not differ statistically from that in the earlier study just by using a sample that includes only the large firms satisfying the sample selection criteria applied in constructing the Chinese input-output tables. This suggests that aggregation bias driven by firm heterogeneity alone is sufficient to explain the wedge between the estimates.

What has caused the rise in the domestic content of China's exports? The authors' firm-level regressions reveal that it has been driven mainly by individual processing exporters substituting domestic for imported materials. Other factors—such as rising production costs due to higher wages, a changing composition of Chinese exports toward industries with high domestic content, or a churning of firms with different levels of domestic content—cannot explain the upward trend during the sample period.

The authors also find that the substitution of domestic for imported materials was induced by the country's liberalization of trade and foreign direct investment (FDI) since the early 2000s. To guide their empirical analysis, they build a model featuring a translog cost function. This permits estimation of the time-varying elasticity of substitution between domestic and foreign input varieties to study how different government policies may affect a country's domestic content. Results show that for China, increasing FDI and declining input tariffs have led to a greater variety of domestic materials becoming available at lower prices during the sample period. For the entire processing sector and for most industries within that sector, imported and domestic materials are gross substitutes, with the estimated elasticity of substitution ranging between 1.9 and 6.6. These large elasticities explain why lower prices of domestic materials can result in such significant increases in domestic content at the firm and thus the aggregate level in China.

The results confirm existing findings that the reduction in input tariffs and greater presence of FDI in downstream sectors can lead to an expansion of domestic product variety. They also show that the rising domestic content of China's exports is due to the substitution of domestic for imported materials—indicating that the country is relying less on imports and becoming more competitive in intermediate input sectors. This suggests that China has been moving up the value chains. Given its sheer size, this may have important implications for world trade and the global economy.

Hiau Looi Kee and Heiwai Tang. 2015. "*Domestic Value Added in Exports: Theory and Firm Evidence from China*." American Economic Review 106 (6): 1402–36.

The Quality Effects of Exporting to High-Income Countries

Increasing exports to richer markets may require quality upgrading by entire complexes of suppliers and downstream producers

A growing body of research suggests that exporting has important effects on firms' behavior. Although results for residual-based measures of productivity are mixed, recent studies have found causal effects of exporting on a variety of directly observable outcomes, including technology investments, measures of product quality, and working conditions.

What explains these impacts? Perhaps the most common theoretical explanation emphasizes scale effects: in the presence of fixed investment costs—for example, for purchases of technology or the screening of workers—increases in sales volume due to exports reduce the fixed costs per unit and tend to induce firms to undertake such investments. In this explanation, therefore, the effects of exporting on firms' behavior would depend on the volume of exports, and not on the characteristics of particular export destinations.

A separate explanation focuses on quality choice: the varieties that firms sell on export markets may differ from those that they sell on domestic markets, and the different varieties may require different technologies, skills, and other inputs in production. If richer consumers are more willing to pay for product quality, firms may choose to sell higher-quality varieties in richer countries to appeal to them.

Empirically, the relative importance of these different explanations remains an open question. Plant-level data sets typically do not provide information on the destination of exports, which makes it difficult to distinguish among the different channels. Newly available customs data sets on firms' international transactions have provided some support for the income-based quality choice mechanism. Cross-sectional evidence for China, France, Hungary, Portugal, and the United States reveals that firms charge higher prices for goods sold to richer destination markets within narrow product categories, controlling for other destination characteristics. This cross-sectional evidence is not definitive, however, for two reasons. First, firms may charge higher markups in richer countries, even for homogeneous goods. Second, the cross-sectional evidence does not settle the issue of causality: even if export prices do reflect product quality, shocks at the firm level may affect both which products a firm chooses to sell and where it is able to sell them, leading to a positive correlation between price and destination income even in the absence of a causal effect of exporting on firm behavior.

In a recent paper Bastos, Silva, and Verhoogen develop an approach to estimating the importance of the income-based quality choice channel—the idea that firms sell higher-quality products to richer consumers and that doing so requires purchasing higher-quality inputs—in shaping firms' behavior in the international economy. Direct measures of product quality are not available, and following a growing literature they seek to draw inferences about product quality from information about prices. But such inferences are confounded by the well-known fact that prices may reflect markups as well as product quality. Their proposed solution to this problem is to focus on how the input prices paid by a firm respond to exogenous variation in the income level of the firm's export destinations. While output prices may clearly reflect various forms of pricing-to-market, input prices arguably do not.

Using this insight, and detailed customs and firm-product-level data from Portugal, the authors examine the effects of firm-specific real exchange rate shocks leading to variation in exports to different destinations on the input prices paid by manufacturing firms. The results indicate that there is a positive, robust, and statistically and economically significant relationship between average destination income and input prices within firms. Alternative candidates for explaining the effects of exporting on firms' behavior are difficult to reconcile with the observed patterns.

Overall, the findings support the hypothesis that firms choose to sell higher-quality products in richer countries, that doing so requires purchasing higher-quality inputs, and that this mechanism is part of the explanation for the effects of exporting on firms' behavior that have been documented by a number of studies. Although product quality is not directly observed and caution needs to be exercised in interpreting the results, the empirical patterns documented in the authors' analysis add to the accumulation of evidence in the literature that quality choice for both outputs and inputs is an important component of firms' behavior in the international economy.

While the analysis focuses on Portugal, a high-income economy, these findings have implications for our understanding of the upgrading process in developing countries. In particular, the results reinforce the idea that increasing exports to high-income destinations may require quality upgrading by entire complexes of suppliers and downstream producers, not just by particular exporters. The empirical setting has the advantage of making it possible to cleanly identify a causal relationship between average destination income and material input prices, but the basic findings seem likely to apply more broadly.

Paulo Bastos, Joana Silva, and Eric Verhoogen. 2014. "Export Destinations and Input Prices." Policy Research Working Paper 6914, World Bank, Washington, DC.

Labor Market Frictions and Trade Adjustment Costs in Developing Countries

A global map of labor mobility costs sheds light on how long it might take for different countries to fully adjust to trade shocks

Changes in trade policies—such as those relating to quotas, tariffs, sanitary measures, anti-dumping laws, or customs agreements—affect market conditions significantly and induce responses in wages and employment. But inefficiencies in labor markets impede the process through which workers and firms adjust to new market conditions. Moving costs, firing and hiring costs, and differences in sector-specific skills can create frictions and contribute to labor market inefficiencies. One consequence of such frictions is that trade shocks induce only gradual wage and employment responses.

Nevertheless, relatively little is known about how sluggish labor market adjustment affects economic well-being. The assessment of these labor market responses requires estimates of the costs of labor mobility, but these estimates are seldom available in developing countries. In a recent paper Artuc, Lederman, and Porto construct a map of estimates of labor mobility costs across the developing world and use these estimates to explore labor market responses to trade shocks. The authors use the United Nations Industrial Development Organization (UNIDO) database, which provides information on labor allocations and wages in manufacturing, to estimate a map of the labor mobility costs for 25 developed and 31 developing countries.

It typically takes six years for a country to fully adjust to a trade shock, and the higher the mobility costs are, the longer this transition takes

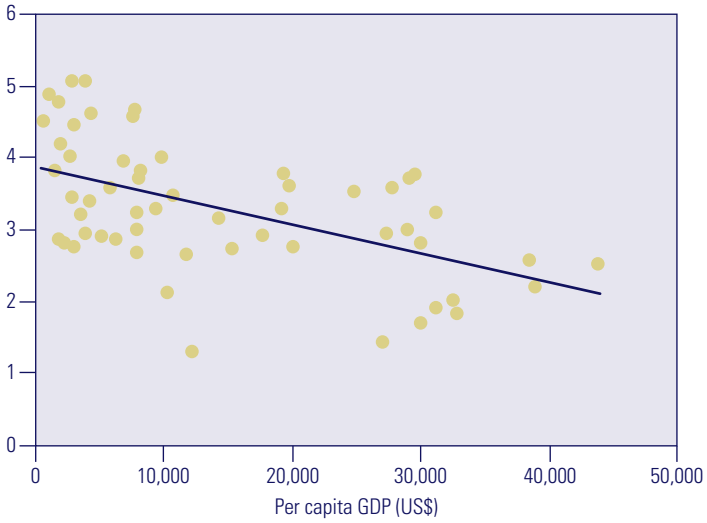
The authors find that the costs of labor mobility are large, where the costs are defined as the lifetime welfare loss faced by a representative worker who is forced out of a specific industry. On average, the labor mobility costs in developing countries are equivalent to 3.7 times the annual wage in manufacturing. In developed countries the mobility costs are 2.7 times the annual wage—much lower, as expected. Indeed, there is a negative correlation between per capita GDP and mobility costs (figure 1). Adjustment costs vary significantly across regions (4.0 times the annual wage in Eastern Europe, 4.0 in Sub-Saharan Africa, 3.9 in South Asia, 3.6 in the Middle East and North Africa, 3.5 in East Asia, 3.2 in Latin America, 2.6 in Western Europe, and 2.2 in North America).

While negatively correlated with per capita GDP, labor mobility costs are positively correlated with poverty rates. They are also inversely correlated with tertiary educational attainment and schooling quality, but are uncorrelated with primary and secondary enrollment. And they are positively correlated with other frictions, distortions, and constraints in the economy. Most importantly, the size of the labor mobility costs matters. It typically takes six years for a country to fully adjust to a trade shock, and the higher the mobility costs are, the longer this transition takes. The inability to adjust quickly is costly.

The authors estimate trade adjustment costs, which vary widely across countries. On average, the costs of adjustment to a trade shock in the food sector can be as high as the actual (static) gains from trade, while the costs of adjustment to a trade shock in the textile sector can be equivalent to about 60 percent of the gains from trade. These results confirm the importance of incorporating labor market imperfections into the assessment of trade policy and trade shocks.

Figure 1. Labor Mobility Costs and Per Capita GDP

Labor mobility costs as a multiple of average annual local wage



Source: Calculations based on UNIDO data.

Erhan Artuc, Daniel Lederman, and Guido Porto. 2015. "A *Mapping of Labor Mobility Costs in the Developing World.*" Journal of International Economics 95 (1): 28–41.

How Product Standards Affect Firms' Export Decisions

Firms are less likely to export to markets where product standards are more stringent than those they face at home

Evidence shows that the substantial decline in tariffs over recent decades has fostered growth in world trade. Less well understood are the consequences of the growing use of nontariff measures by both developed and developing countries. The successful conclusion of the Trans-Pacific Partnership negotiations has revived interest in the role of nontariff measures, particularly the regulatory standards on food and agricultural products known as sanitary and phytosanitary (SPS) standards.

There are legitimate health and safety reasons for countries to impose SPS standards. But while these standards may address market failures and spillovers, they may also create trade frictions and serve protectionist motives. Moreover, domestic food and agricultural standards often deviate from international ones. Higher-income countries generally have greater societal awareness of and concerns about the standards of the food they consume and thus tend to impose stricter SPS standards.

What are the consequences of SPS standards for trade? The effect is ambiguous, particularly for developing countries. SPS standards can facilitate trade by signaling that products allowed into the market are safe for consumers. And complying with such standards may require quality improvements that enhance consumers' demand for imports. This creates incentives for developing country exporters to modernize their supply chain structure, enabling them to improve their competitiveness while strengthening domestic standards.

But SPS standards can also increase the costs of exporting. Complying with stringent standards involves both fixed costs (such as for upgrading production systems, implementing quality control procedures, and obtaining certifications) and variable ones (such as from inspection procedures). For firms in developing countries these additional costs can be high enough so that SPS standards act as barriers to entry.

Knowing how such standards affect firms' export decisions and export success is critical for both economists and policy makers. In a new paper using firm-level data, Fernandes, Ferro, and Wilson provide econometric evidence on the effect of SPS standards on trade. The authors focus on pesticide standards set by exporting and importing countries on food and agricultural products, determining the maximum levels of residues for pesticides legally permitted on unprocessed food. They estimate the effect of these standards on firms' decisions to export, enter, or exit a product-destination market as well as their effect on export values, quantities, and unit prices. To do so, they combine two novel data sets, one covering all exporting firms in 42 developing countries and one covering pesticide standards for 243 agricultural products in 80 importing countries over the period 2006–12.

The evidence shows that standards have significant effects on individual firms' decisions to enter foreign markets and their eventual success in those markets. An increase in the stringency of standards in the destination country relative to those in the exporting country significantly lowers firms' probability of exporting, deters exporting firms from entering new markets, and fosters exit from existing markets. Relatively stringent standards also cut exporters' values and the quantities sold in foreign markets. The effects on market entry and exit decisions are greater for smaller exporters than for larger ones. Network effects—which are captured by the presence of firms from the same country that are all exporting the same product to a given destination—reduce the negative effect of relatively stringent standards on firms' decisions to enter new markets.

These findings are consistent with recent trade models with heterogeneous firms that predict that only the most productive firms are able to overcome the fixed costs of exporting. The need to obtain information on foreign standards and adjust production processes to comply with those standards increases the fixed costs of exporting. This helps explain why relatively stringent standards have a stronger effect on the entry and exit decisions of smaller exporters. These findings have clear implications for developing countries trying to reduce poverty by expanding agricultural trade.

Differences in SPS standards across countries are likely to persist. Full global harmonization is unlikely—the World Trade Organization's Agreement on Sanitary and Phytosanitary Measures has created no more than a presumption in favor of the international Codex Alimentarius standards. Moreover, the development of new and deeper trade agreements that include nontariff measures (such as the Trans-Pacific Partnership) will have a great impact on third-country firms in developing countries that may be unable to meet the new agreed-upon standards.

What can developing country governments do to support local firms' entry into and success in foreign markets? The best strategy is to provide the necessary "quality infrastructure" so that firms have all the information they need on standards in foreign destinations, supply the necessary testing facilities, and maintain efficient customs clearance procedures that will reduce the overall costs to export. Developing countries also need to revise their SPS standards to ensure that they reduce the relative cost of exporting for local firms while also protecting the health and safety of their citizens.

Ana Fernandes, Esteban Ferro, and John S. Wilson. 2015. "Product Standards and Firms' Export Decisions." Policy Research Working Paper 7315, World Bank, Washington, DC.

How Services Reform Helped Revive Indian Manufacturing

A key factor in the success of Indian manufacturing in recent years lies outside manufacturing—in the services sector

One element of India's rapid economic growth since the early 1990s has been the modest resurgence of manufacturing in the country. Conventional explanations have focused on policy reforms in manufacturing industries, notably trade liberalization and the dismantling of the "license raj." Few have recognized that a key factor lies outside manufacturing itself, in the services sector.

The neglect of services is surprising because it should be obvious how much manufacturing firms depend on services—for credit and insurance, for transport and telecommunications. Moreover, reforms in the 1990s visibly transformed these services sectors, with greater openness and improved regulation leading to a dramatic growth in domestic and foreign investment. Indian manufacturing firms are no longer at the mercy of inefficient public monopolies but can now source services from a wide range of domestic and foreign providers operating in an increasingly competitive environment. As a result, they have access to better, newer, more reliable, and more diverse business services.

The telecommunications market, of course, exemplifies the transformative power of liberalization interacting with technological change. It is easy to forget that in the 1980s India's communications minister, C. M. Stephen, declared in parliament that telephones were a luxury, not a right, and that any customers dissatisfied with their service were welcome to return their phone—because there was an eight-year waiting list for service. Today India has the world's second-largest telecommunications network and the third-largest Internet user base, with one of the lowest call tariffs. Indian businesses, once severely handicapped in communicating with customers and suppliers, now enjoy world-class communications services.

Transport has seen an improvement but not yet a revolution. The average turnaround time for a container at major Indian ports has declined from about eight days in 1990 to four today. This is still a long time by international standards, but the improvement has made a difference for firms that compete in highly variable markets such as textiles and electronics, where the ability to respond quickly to changes in demand is crucial.

Banking reforms seem to have helped too. Manufacturing firms in India saw an improvement in their access to and cost of finance as a result of the banking sector liberalization. Two World Bank Investment Climate Surveys point to a positive trend: in 2002, 61 percent of Indian firms reported that access to finance was an obstacle to their business, but in 2006 only 41 percent had the same complaint.

These improvements have enhanced firms' ability to invest in new business opportunities and better production technology, to exploit economies of scale by concentrating production in fewer locations, to efficiently manage inventories, and to make coordinated decisions with their suppliers and customers.

In a recent article Arnold, Javorcik, Lipscomb, and Mattoo analyze the link between services reforms and manufacturing productivity in India. The authors collected detailed information on the pace of reform across Indian services sectors, with a particular focus on entry and operational restrictions. To make this information amenable to econometric analysis, they aggregated it into time-varying reform indexes. They then related the total factor productivity of about 4,000 manufacturing firms to the state of liberalization in services sectors, taking into account other aspects of openness, such as tariffs on output and intermediate inputs as well as foreign direct investment in final and intermediate goods sectors.

Their results suggest that pro-competitive reforms in banking, transport, insurance, and telecommunications boosted the productivity of manufacturing firms. The reforms benefited both foreign and locally owned manufacturing firms. A one-standard-deviation increase in the aggregate index of services liberalization resulted in a productivity increase of 11.7 percent for domestic firms and 13.2 percent for foreign enterprises. The additional effect of transport sector reforms was greatest, followed by that of reforms in telecommunications and banking.

Despite significant improvements, services reforms in India remain incomplete and barriers to domestic and foreign competition persist. Even outside India, today most of the policy barriers to competition, and to foreign direct investment, are not in goods but in services. For example, countries in Southeast Asia that have reaped huge benefits from the liberalization of trade and investment in goods, such as Malaysia and Thailand, continue to maintain restrictions on foreign presence in services ranging from transport to telecommunications. The productivity improvements observed in manufacturing industries in India following services liberalization suggest that, in addition to holding back the development of the services sectors, these barriers also penalize manufacturing firms.

Wider appreciation of this link between services sectors and manufacturing industries may help create broader political support for pro-competitive regulatory reform in services. It may also provide greater perspective for international trade negotiations, which continue to focus on goods—agricultural and manufacturing products—and only notionally address impediments to services trade and investment.

Jens Arnold, Beata Javorcik, Molly Lipscomb, and Aaditya Mattoo. 2016. "*Services Reform and Manufacturing Performance: Evidence from India.*" Economic Journal 126 (590): 1–39.

Are the Benefits of Export Support Durable?

An export promotion program in Tunisia benefited participants—but only in the short term. Why did the benefits not last?

Trade liberalization has not always led to better export performance. The focus of trade policy has therefore shifted in recent years toward trade facilitation and export promotion, with substantial resources going to export processing zones, export assistance programs, and the modernization of border management and customs procedures. Yet there is not much evidence on the impact of such initiatives.

To add to this evidence, a recent paper by Cadot, Fernandes, Gourdon, and Mattoo assesses the effects of Tunisia's FAMEX export promotion program on participating firms. While evaluations of such programs typically focus on their contemporaneous or short-term impact, the authors also consider the longer-term impact.

The FAMEX program was aimed at helping Tunisian firms overcome barriers to selling in foreign markets and enhance their competitiveness. Its rationale was that Tunisian firms were poorly informed about export markets and had difficulty identifying the right target markets, product segments, and sales channels. The program provided firms with matching grants cofinancing half the cost of their export business plans, which focused on one of three possible objectives: to become a substantive exporter (if the firm had little or no export experience), to diversify destination markets, or to develop new export products. Grants were used mostly to cofinance the cost of technical assistance and marketing services provided by local and foreign experts.

The analysis combines firm-level data from several sources—the FAMEX program, the National Statistical Institute and Investment Promotion Agency, and the customs agency—into a unique data set on Tunisian exporters. Results are estimated using a propensity-score-weighted regression method that controls for firm fixed effects and whose weights are obtained from a probit regression for selection into the FAMEX program that accounts for, among other things, past firm export performance. Several firm-level export outcome variables are considered, ranging from firms' total exports to their numbers of products and destinations as well as such dimensions as export unit values, product sophistication, and distance to destinations.

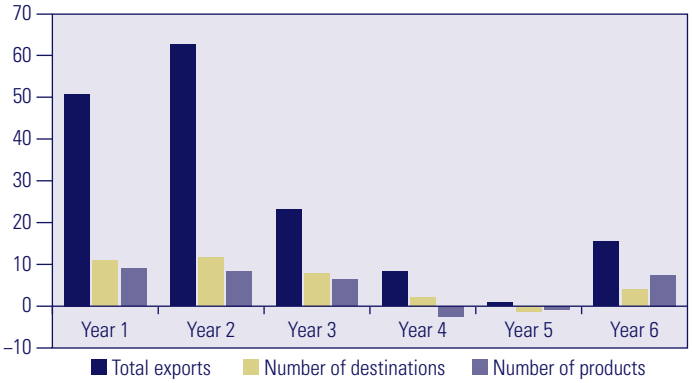
The estimates suggest that compared with a control group, FAMEX beneficiaries initially enjoyed a boost in total exports along with greater diversification of destinations and products (figure 1). But three years after the intervention, beneficiaries' export levels and diversification no longer differed significantly from those of the control group. Moreover, the effects varied across firms: small and large firms saw no positive impact on export levels, and even the positive impact for medium-size firms was temporary.

The results show no evidence that the temporariness of the impact reflected spillovers to nonbeneficiary firms that helped them to catch up or greater exposure of beneficiary firms to crisis-affected economies. On the contrary, the impact may have been temporary because it was hard for a short-lived, arm's-length intervention to durably enhance competitiveness. Indeed, the program led to no improvements in product quality as would be reflected in higher unit prices or greater product sophistication. Instead, it primarily benefited firms that initially had no internal export unit, suggesting that assistance was rudimentary. FAMEX may have placed too much emphasis on "low-hanging fruit" (helping domestic exporters attend or set up representation at foreign fairs) rather than on more complex activities aimed at improving products and processes, which would enhance longer-term competitiveness.

Despite the fairly transient impact, this relatively low-cost intervention still generated about 2 Tunisian dinars of additional private profit per dinar of program expenditure. The firms' benefit-cost ratio was 3.57 while the government merely broke even, as the additional corporate tax revenue just covered the public cost of the program. These estimates raise the question of why the firms did not undertake such investments on their own. Of course, firms' inability to borrow against future profits, or lack of information about the benefits of investing in export promotion, could still provide a rationale for the program.

Figure 1. Effect of Tunisia's FAMEX Program on Export Outcomes for Participating Firms

Change in export outcome for FAMEX firms relative to control firms (%)



Note: For each year, the change in a firm's export outcome is calculated as the difference between that year's outcome and the corresponding outcome before treatment. The figure shows the difference between these changes for FAMEX firms and the corresponding changes for control firms based on propensity-score-weighted regression estimates. Year 1 is the year of treatment.

Olivier Cadot, Ana Fernandes, Julien Gourdon, and Aaditya Mattoo. 2015. "*Are the Benefits of Export Support Durable? Evidence from Tunisia.*" Journal of International Economics 97 (2): 310–24.

Resource Rents and Local Development in Post-Apartheid South Africa

In post-apartheid South Africa the dismantling of coercive institutions affected the distribution of rents from natural resource exports

A large body of evidence has documented how bad economic institutions can stunt development. But can a bad legacy be turned into a relatively more prosperous future? In a recent paper Bastos and Bottan study how reforms at the end of apartheid in South Africa spurred development for marginalized communities. In October 1996, just after the end of apartheid, communities located just inside the former self-governing territories set aside for black inhabitants were considerably poorer than communities located just outside these areas. Fifteen years later the gaps remained sizable. But incomes converged at a different pace across local communities of the former homelands.

What explains this difference? The authors argue that the different rates of income growth for black communities in the former homelands may be explained in part by the degree of exposure of marginalized communities to rents from natural resource exports—as measured by the initial share of people in each community who were employed by the mining industry. Although South Africa is a leading mineral producer and exporter, the industry has traditionally been controlled by a few privately owned mining investment houses. Moreover, in the apartheid era the mining industry was characterized by a highly uneven distribution of income: profits were high, but wages for black workers were low. In the gold mining industry in 1972, for example, monthly salaries were about 18 rand for African miners but 400 rand for white miners. Black workers were not included in the legal definition of employee and so could not become members of legally registered labor unions.

After the end of apartheid, reforms created scope for workers to collectively bargain for a larger share of industry profits. The bill of rights of the 1996 constitution not only prohibited the state from discrimination on any grounds but also included explicit reforms to labor laws—notably by imposing fair labor practices—and the right to strike. The mining industry had the highest unionization rate of all sectors, exceeding 70 percent in both 1996 and 2011, and thus was in a particularly strong position to benefit from these reforms.

Examining relative changes between 1996 and 2011, the authors find that incomes converged faster among marginalized communities with higher initial employment in the mining industry. The results accord with standard bargaining theory in which the dismantling of coercive institutions improves the negotiating position of unionized workers in the sector. Other possible explanations for the income convergence of marginalized communities in the post-apartheid period are difficult to reconcile with the observed patterns.

Paulo Bastos and Nicolas Bottan. 2016. "Resource Rents, Coercion, and Local Development: Evidence from Post-Apartheid South Africa." Policy Research Working Paper 7572, World Bank, Washington, DC.

(continued from page 1)

Insights from World Bank Research on Trade and Globalization

products in 80 importing countries for 2006–12. It finds that where standards in the importing country are more restrictive than those in the exporting country, firms are less likely to export—with smaller exporters the worst affected.

Conventional explanations for the post-1991 growth of India's manufacturing sector focus on trade liberalization and industrial delicensing. But recent research shows that a key factor lies outside manufacturing—in the services sector. Using a new data set on services reforms and panel data for about 4,000 Indian firms, it finds that banking, transport, insurance, and telecommunications reforms all had significant positive effects on the productivity of both foreign and locally owned manufacturing firms.

The limited success of trade liberalization in spurring exports in some countries has renewed interest in proactive trade policies. A paper assessing Tunisia's FAMEX export promotion program finds that beneficiaries initially saw both higher export levels and greater diversification in products and destinations. But these effects lasted for only about three years. Enhancements in product quality or sophistication could have durably strengthened competitiveness.

The political support for policy reform depends less on its aggregate benefits than on its distributional effects. One study examines how the dismantling of coercive institutions after the end of apartheid in South Africa affected the distribution of rents from natural resource exports. Another presents evidence suggesting that during Tunisian president Ben Ali's reign, firms owned by the president and his family were more likely to evade import tariffs and other taxes. Understanding the political forces that shape existing policies and their implementation is a precondition for successful reform.

Pursuing international trade cooperation. International trade cooperation has stalled, multilaterally at the World Trade Organization (WTO) and now even in the preferential mega-regional trade initiatives. Recent research finds that the WTO is structured to encourage policy-efficiency-enhancing outcomes through a process of shallow integration—that is, reciprocal liberalization of border barriers and rules against discrimination. The "deep" integration envisaged by mega-regional agreements focuses on regulations on consumer product safety, the environment, and labor standards. The implied tradeoffs—between efficiency, local preferences, and sovereignty—need to be much better understood and explained to a skeptical public.

Are Politically Connected Firms More Likely to Evade Import Tariffs and Other Taxes?

In Tunisia firms owned by former president Ben Ali and his family were more likely than others to evade import tariffs and other taxes during his reign

During the protests of the Arab Spring, one of the chief demands of those who took to the streets was ending abuse of power by the ruling elites. Two recent papers unveil the scale of such abuse in Tunisia. They document evidence suggesting that firms owned by former president Zine al-Abidine Ben Ali and his family were more likely to evade taxes, circumventing at least $1.2 billion worth of import tariffs on account of their political connections between 2002 and 2009. While evasion by firms previously owned by the Ben Ali family seems to have subsided since the Jasmine Revolution, overall evasion in Tunisia has escalated.

How is it possible to know this? Verifying tax declarations is difficult, since objective information on what firms should declare is typically not available. And in Tunisia information sharing between (and within) government agencies was extremely limited during the Ben Ali era. But data made available by Tunisian authorities after the revolution made it possible to detect evasion by identifying discrepancies between declarations made to different government agencies. By comparing reports made to the social security and customs administrations with tax records, the authors were able to assess the prevalence of nonreporting and underreporting.

Nonreporting was widespread. Among firms not connected with the Ben Ali family, 9 percent did not submit a tax declaration despite being economically active. Nonreporting was even more widespread among active firms owned by Ben Ali or his family; with other conditions remaining the same, these connected firms were 4.6 percentage points more likely than nonconnected firms to have a missing tax declaration despite being active.

Underreporting was also common. For the economically active firms that submitted tax declarations, the authors checked whether the sales these firms declared to the tax authorities were consistent with their reports to the social security and customs administrations. Tax declarations were considered anomalous if the sales reported were lower than the reporting firm's wage bill, total imports, or total exports. No less than 15.3 percent of nonconnected firms submitted a tax declaration that was anomalous in this way. All else being held equal, connected firms were 8.4 percentage points more likely to submit such an anomalous declaration.

In addition to assessing domestic tax evasion, the authors examined evasion of import tariffs by comparing import transaction records with counterpart declarations by exporters, who have limited incentives to lie about how much they have sold abroad. If imports are reported correctly, they must be very close to exports reported in countries that send goods to Tunisia. But if imports are declared incorrectly—or not at all—then "evasion gaps" may arise. These are measured as the difference between exports reported in countries selling goods to Tunisia and imports of those same goods reported in Tunisia; the greater this difference, the more imports are "missing" and the less revenue is collected by Tunisian customs. Such evasion gaps are typically largest for goods subject to high tariffs, where evasion is most lucrative. In this context they have become a standard proxy for tax evasion.

In Tunisia evasion gaps were greatest for products imported by firms owned by the Ben Ali family—and especially large when such products were subject to high tariffs. These gaps were due to the underreporting of prices. Firms owned by the Ben Ali family reported significantly lower prices than their competitors for the same goods imported from the same country (and consequently paid less tax for those goods), with the gap between Ben Ali prices and other firms' prices widening with the tariff rate.

Why does this matter? Tax evasion is not only unfair as well as damaging to government revenues. It is also inefficient because it gives the perpetrators a cost advantage over those who are compliant that is not based on performance.

What has happened since the Jasmine Revolution? The ousting of Ben Ali during the revolution led to a reduction in tax evasion and in the underreporting of unit prices in product lines in which the Ben Ali family had been active. But it sparked an increase in overall tariff evasion. Despite curtailed capture by the Ben Ali clan, tariff evasion gaps have risen by 5 percent on average, in part reflecting the rise in informal trade with Algeria and Libya. Thus, if anything, tax evasion seems to have escalated since the Jasmine Revolution.

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Trade Agreements under Threat

Is 2016 the year that antiglobalization forces will halt what has been a seven-decade push on global economic cooperation?

On June 23, 2016, the United Kingdom held a referendum in which a majority of voters opted to leave the European Union, after 43 years of membership for the country. The unprecedented Brexit vote opens up questions about the future of U.K.-EU relations, of further EU integration, and of the United Kingdom's trade relationships with the rest of the world.

In the United States the 2016 election season has featured presidential candidates from both major political parties actively speaking out against international trade. Particularly caught up in the rhetoric have been international trade agreements. The target is not just the North American Free Trade Agreement (NAFTA). One proposal has the United States potentially exiting from the World Trade Organization (WTO).

The public debates taking place in the United Kingdom, the United States, and other countries bring into sharp relief fundamental questions about international cooperation over trade policy. Why do countries sign on to these trade agreements? What role do trade agreements play?

In a lengthy survey of recent research Bagwell, Bown, and Staiger provide some initial answers and perspectives. Their study is motivated primarily by a need to synthesize major intellectual advances in economic research over the past decade.

A main focus is the WTO. This multilateral agreement involves more than 160 countries that have collectively established the basic rules for nondiscriminatory trade in the global economy. The approach under the WTO and its predecessor—the General Agreement on Tariffs and Trade (GATT)—has been to engage in a gradual process of "shallow" integration. The GATT/WTO has routinely convened countries to voluntarily reduce their border barriers, such as import tariffs. One important result is that countries around the world today apply import tariffs under the GATT/WTO agreements at historically low rates.

Recent economic research has shed new light on the role that basic principles and formal rules play in making the GATT/WTO agreements work. The first is reciprocity, or the mutual exchange of market access. Reciprocity helps countries move out of prisoner's-dilemma-like, tariff-ridden outcomes. A growing body of empirical evidence shows that these trade agreements play a critical role in galvanizing governments across countries to jointly lower their import tariffs and then maintain those tariffs at low rates.

The GATT/WTO agreements also include two rules of nondiscrimination. Economic research has shown that these rules affect how countries negotiate and that they sustain more globally efficient levels of trade than if governments were interacting in a noncooperative manner and without trade agreements.

The first such rule is national treatment. This requires that once the exporter of a good has paid the import tariff necessary to cross the border to sell into a foreign market, the government may not use additional taxation or regulation that would affect that product differently than a nationally produced good. The second is most-favored-nation (MFN) treatment. With only well-codified exceptions, WTO members are supposed to apply the same policy across all trading partners.

Negotiators of the mega-regional trade agreements—the Trans-Pacific Partnership and the Transatlantic Trade and Investment Partnership—are pushing in a different direction than the WTO. This direction is more than the obvious fact that treating agreement insiders differently from outsiders is a major exception to the MFN rule. These new types of arrangements involve governments negotiating over new and different issue areas. "Deep" integration negotiations are taking place directly over policies that governments apply behind the border, such as regulations on consumer product safety, the environment, and labor standards.

Are direct negotiations over such policies necessary? What are the tradeoffs—for efficiency, for local preferences, and for sovereignty—in the approach of these mega-regionals to international cooperation as compared with the shallow approach of the GATT/WTO?

Guidance from economic research on this last question is still at an early stage. Relatively little is known about the very newest negotiations taking place under the mega-regionals. Is it possible that they are pushing too deep? Or is there something more fundamental about international trade that has changed and that requires this additional depth?

What is increasingly clear is that forces emerging in 2016 are putting all forms of trade agreements under the microscope. That these threats are arising from voters in democracies makes them fundamentally different from other recent threats to cooperation. Consider, for example, the acute economic shock of the Great Recession, the most recent of these other threats suggesting the possibility of an imminent return to 1930s-type protectionism.

What role for trade agreements? Today's researchers must continue to provide theoretical and empirical answers. Before it is too late, they must also come up with more effective ways of explaining the benefits of international cooperation to the voting public.

Kyle Bagwell, Chad P. Bown, and Robert W. Staiger. Forthcoming. "Is the WTO *Passé?"* Journal of Economic Literature. (*Also issued as Policy Research Working Paper* 7304, *World Bank, Washington*, DC, 2015.)

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